Missouri Botanical Garden
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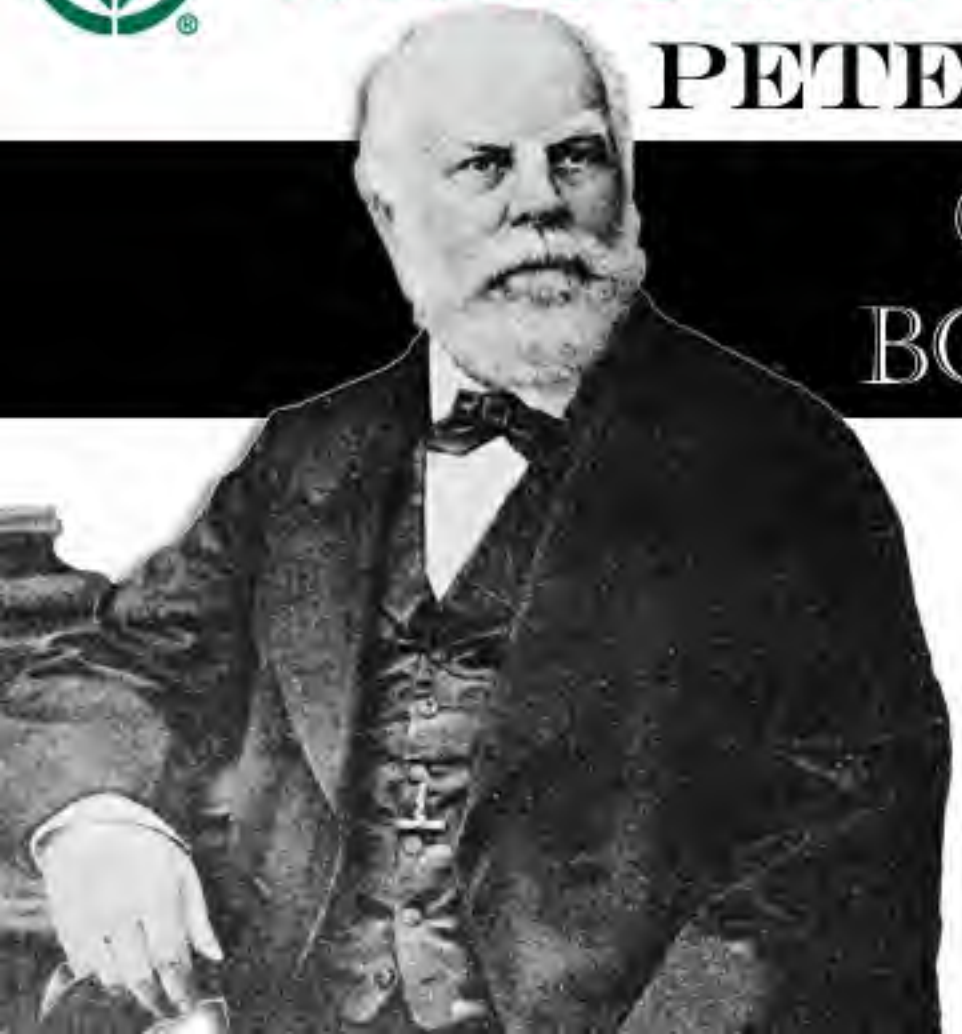
George Engelmann Botanical Notebooks



Pagination Note:
Since many of the items lack a specific page number, the page number displayed online refers to the sequentially created number each item was given upon cataloging the materials.

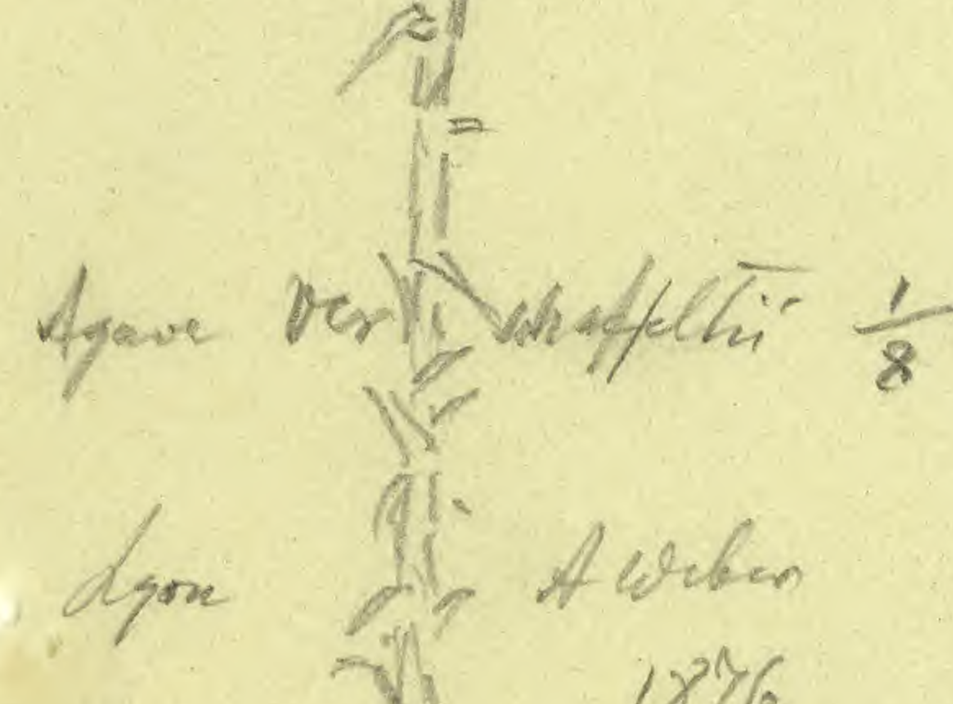
Agave Parryi Engelmanni 1/8 size

1/2 nat size

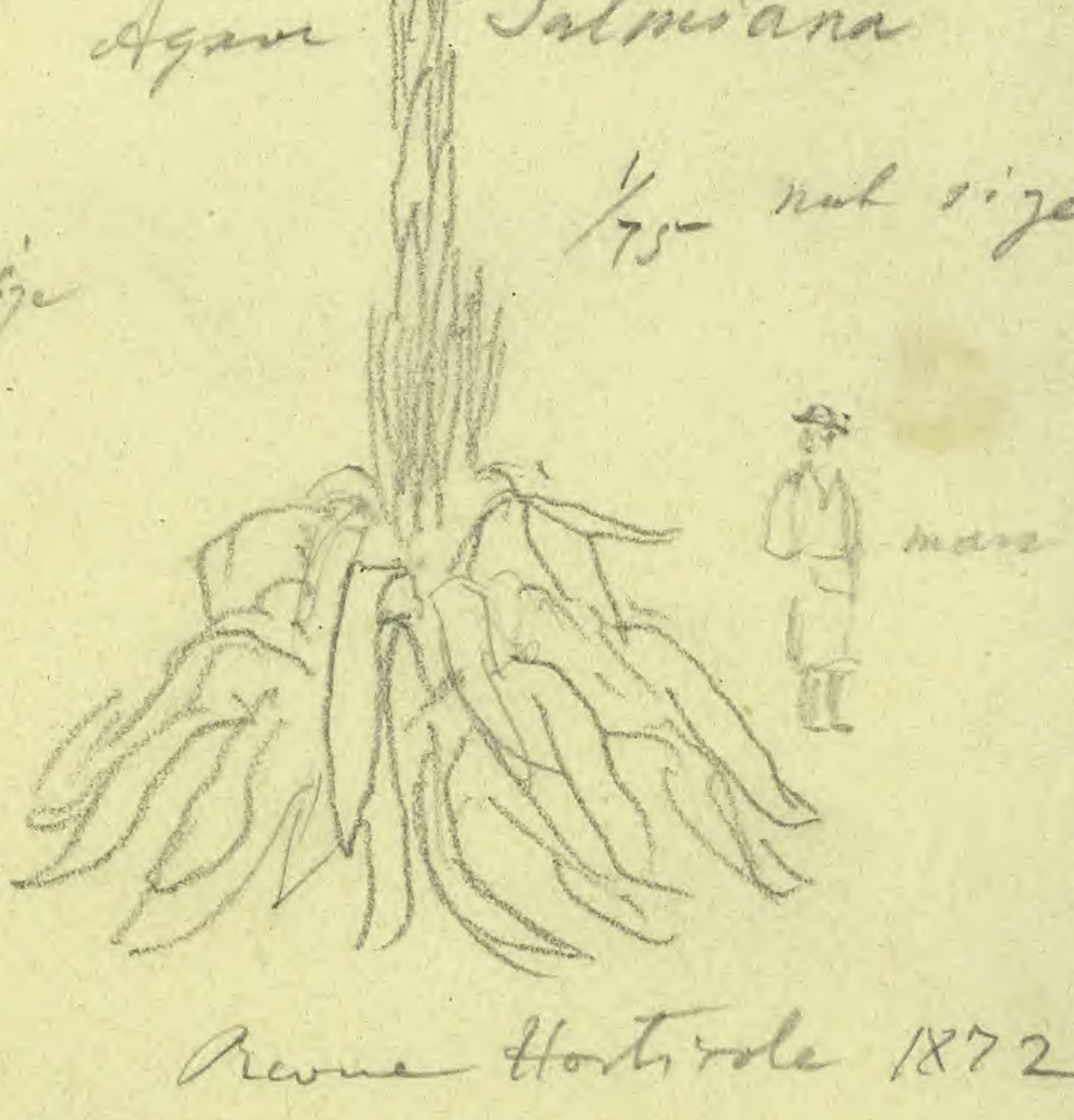
Agave Salmeana

1/75 nat size

Agave A Weberi 1876



Agavae paniculatae racemiformes ε



Revue Horticole 1872

Agave paniculatae Thyrsoidae ε

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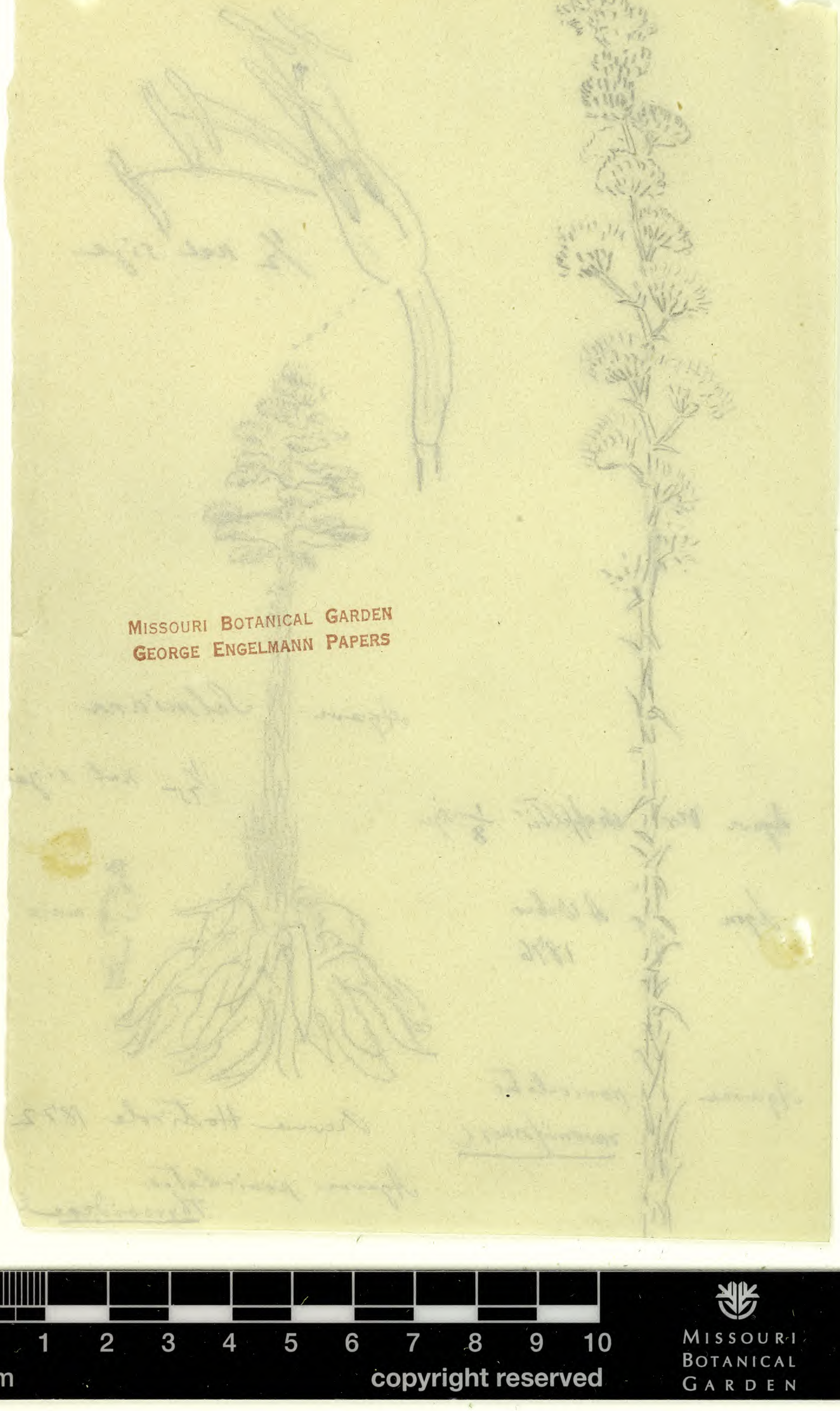
8205



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Agnes Veschaffelii

(This folder includes sheets 1 & 3-4).

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Agave Vaseyi Scheffelti

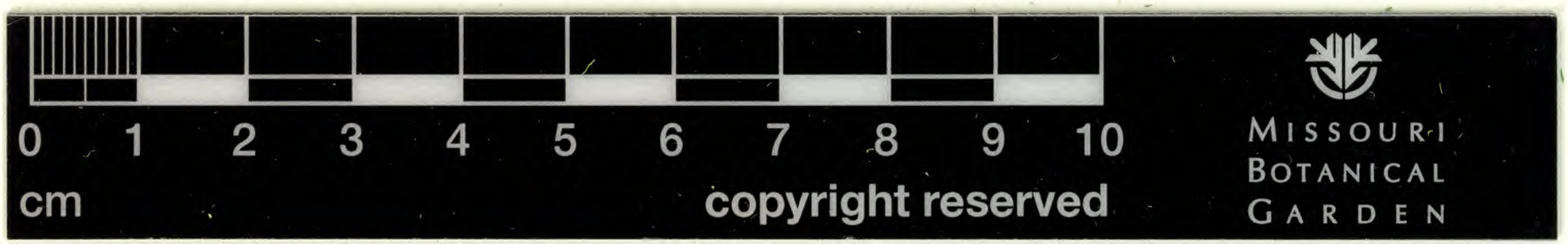
April 22 1877

Sp A. Weberi mss April 1877

Sept

Lobes about as long as Tube
Filaments adnate ⅔ of tube,
6 mm longer than lobes
style (full grown?) 15 mm
longer than lobes
anthers 20–21 mm long

anthotaxis head on short
(15 mm long) peduncle or stipe
which bears 4 green fleshy
leaves (the outer very short the
3 inner spiny-dentate) and an
irregular flower (too much injured
to describe with 4 (?) lobes and
2 or 3 stamens with crippled
anthers



JNO. S. HEALY,

DRUGGIST AND CHEMIST,

S. W. Cor 5th and Myrtle Sts.

Spuibbs' Preparations constantly on hand.

℞

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8207

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Agave Verschaffelti

var Thompsoniana H.S. Mc Nair (in fruit) Oct 30 1883

Nov 2d 1883

anthers 13–20 mm
Stamens exsert above
perigon 9–11 mm
lobes 12–13 } 24–25
tube 12
inside to top of style
ovary 25–30 mm

stamens inserted 7 mm above base of tube
upper free part of tube 5 mm
therefore a little above the middle

12 feet high
paniculate, with 8 (?) plant and simple branches 4–8 inches long

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8208

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GEORGE ENGELMANN PAPERS

JONES & LEITCH,
DRUGGISTS,
Corner Fifth and Market Streets, St. Louis, Mo.

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cm
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Dr Webas 17 July 1877

Agave Vershaffeltii: 4 specimens flowered 1876 in the Parc of Lyon
3 of these are identic, one of them served for my sketch of inflorescence
Scape in all 3 5-6 feet high — branches of inflorescence 2½ to 4 inches
long

The 4th Specimen " A. Pessoh. var. elegans " — 13-14 feet high
branches much longer than in the other — up to 8 inches long — inflorescence more
paniculate than racemose

The flowers sent [examined, and Sketched by me
are withered flowers of this last form!

8209

Asters Gray & Chapman ii. De Candolles
Prodromus Species vere Asteris Circulum gerebat,
De Candolle Prodr. Vol XIII Sol. Cornutum Lam
Arbustum Dun, Tropingrum Mart. gerebat et Stirpes
Stirpes vere varias cum Rostratum ibrevius, ubi
nisi valde stirpes. Die Beschreibungen sind nicht genügend
nicht auch zu vergleichen, da die meisten auf
Herbarium Specimens oder willkürlichen Skizzen

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

A Newberry

Students pursuing the other courses of study, are expected to execute certain of the above quantitative analyses and determinations as follows: in the course of

1. Civil Engineering. Nos. 1, 2, 3, 4, 5, 6, 7, 27, 28, 29, 34, 41, 42.
2. Mining Engineering, Nos. 1, 2, 3, 4, 5, 6, 7, 9, 10, 15, 19, 22, 27, 28, 29, 41, 42, 43.
3. Metallurgy, Nos. 1, 2, 3. 4, 5, 6, 7, 9, 10, 11, 13, 14, 15, 16, 19, 22, 27, 28, 29, 41, 42, 43.
4. Geology and Natural History, Nos. 1, 2, 3, 4, 5, 6, 7, 9, 15, 17, 18, 26, 27, 28, 29, 34, 39, 40 and 41, 42, 43, including analyses as well as physical tests.

STOICHIOMETRY.

Stoichiometry, the arithmetic of Chemistry, is taught in a special course of lectures and blackboard exercises during the second session of the first year.

George Fogelmeen
LIBRARY.

ASSAYING.

During the third year the student is admitted to the Assay laboratory, where he is provided with a suitable table and a set of Assay apparatus ; and where he has access to crucible and muffle furnaces, and to volumetric apparatus for bullion assay by the wet process. The general principles as well as the special methods of assaying are explained in the lecture-room, and at the same time the ores of the various metals are exhibited and described. The student is then supplied with suitable material, ores of known composition, and is required to make assays himself. He first receives ores of lead, the sulpheret, carbonate, and phosphate, which he mixes with the proper fluxes, and heats in the furnace, obtaining a button of lead, which he carefully weighs, thus determining the percentage of metal in the ore. He then determines by cupellation the amount of silver in the lead. Silver ores are next given to him, at first those which are most easily assayed, such as the mixtures of chloride of silver with quartz; afterwards more complex ores, such as galena, ruby, silver ore, mispickel, fahlerz, etc. These he is required to assay both in the crucible and in the scorifier.

Ores of gold are next supplied, auriferous quartz, slates, pyrites, blende, etc., which are assayed by the most reliable methods.

To facilitate the assay of ores of the precious metals a system of weights has been introduced, by which the weight of the silver or gold globule obtained in the assay shows at once, without calculation, the number of troy ounces in a ton of ore. The student then passes on to the assay of silver and gold bullion, the former by Gay Lussac's volumetric method, the latter by "quartation" or "parting."

Ores of tin, antimony, and iron, are then assayed by the dry methods, when the course is completed. Each student thus executes two or three hundred assays himself, under the immediate supervision of the instructor.

[This folder encloses sheets 155 & 156].

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8210

APPLIED CHEMISTRY.

The instruction in Applied Chemistry extends through the second and third years, and consists of lectures, illustrated by experiments, diagrams and specimens.

The subjects discussed are:

I. Chemical Manufactures: acids, alkalies, and salts.

II. Glass, Porcelain, and Pottery.

III. Limes, Mortars, and Cements.

IV. Fuel and its applications.

V. Artificial Illumination: candles, oils, and lamps, petroleum, gas and its products.

VI. Food and Drink: water, milk, bread, tea, coffee, sugar, fermentation, wine, beer, spirits, vinegar, preservation of food, etc.

VII. Clothing: textile fabrics, bleaching, dyeing, calico printing, paper, tanning, glue, india-rubber, gutta-percha, etc.

VIII. Artificial Fertilizers: guano, superphosphates, poudrettes, etc.

IX. Disinfectants, Antiseptics, Preservation of Wood, etc.

During the vacation at the close of the second year, students in the course of Analytical and Applied Chemistry will be required to prepare a memoir on one of the following subjects: (1,) Coal Tar Products. (2,) Madder, and its applications in the arts. (3,) Tobacco. (4,) The Ceramic arts as practised in America; to be handed in on or before November 1st; and for graduation, students of the third year will be required to hand in on or before the 15th of April, 1872, the following Projét:

An Establishment to produce daily 400 carboys of Sulphuric Acid.

The raw material may be either crude sulphur, iron or copper pyrites. If the latter be employed, the copper must be extracted by some chemical process, and may be sold as cement copper or may be refined and sold as ingot copper. 200 carboys of the daily production may be sold as acid of 60° Baumé, the rest must be oil of vitriol.

The Projét will comprise:

I. Memoir; II. Estimates; III. Drawings.

I. The Drawings will include:

1st. A general plan and elevations of the Works, showing the situations of all the buildings, furnaces, acid chambers, boilers, concentrating and other apparatus.

2d. Details of the furnaces.

Missouri Botanical Garden
George Engelmann Papers

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Missouri Botanical Garden

Agave [New Egypt Expl] Fremont Report, Botany p. 29 1861

Camp 65. Tenaja Spring, Lat of San Bernardino Mts, between it and the Colorado Lat 35.25 Long 113.39 alt. 4151 feet

leaves 8–10 inches long, at base 3/4 inch wide, tapering spinose-pointed, entire edges

Scape 8 feet high; flowers in a long narrow or rather narrow contracted panicle

peduncles [fascicled] remote 6–10 lines long 2–5 flowered very short pedicels

Segments of Perianth 6 lines long, stamens exserted

Anthers & St. paraphysis not known in Jacobi p. 47, nro 117.a

---

29 1871 foliis radicalibus e basi latiore (3/4 poll) sensim angustatis
anlem
in mucronem fere rigidum semiteretem supra canaliculatum desinentibus
rigidis fibris margine integris

scapo elatiore (8-pedali) paucis (1-2 poll longis) bracteis
basi bulbis paucis (2-5) (1-3 poll) ovato-petalis
paucifloris

pedicellis (6-7 lin longis) ovario oblongo-obtuso
6-fido laciniis lanceolatis fere basi tubi brevissimi insertis
patentibus — antheris exsertis 6 lin longis —

cm 0 1 2 3 4 5 6 7 8 9 10
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Feb 14 1871

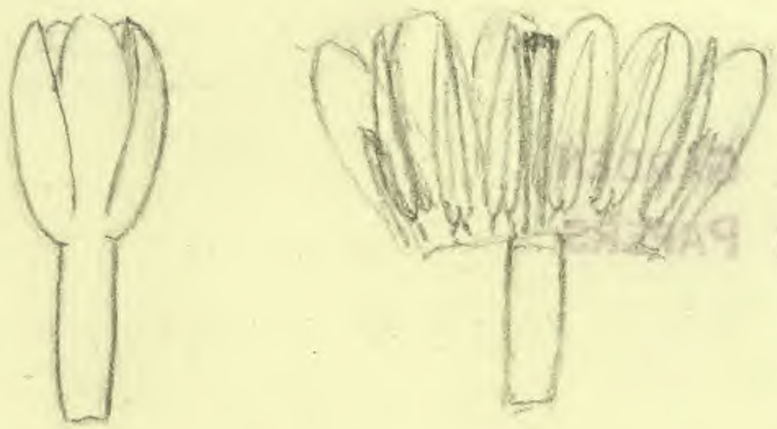
Agave Newberryi

Peacock spring, Dr Newberry, Ives Exped. March 21 1858

leaves only

13 { 11 in m
2 in m

10 in m



perigon divided to near base longer than ovary lobes ovate-oblong. tube very much shorter Stamens attached near base of tube (not in fauces like Lophospilla) anthers 4 mm long pointed, notched at base, attached below middle

single leaf of specimen 7 inches long, tapering from a base 9 (8) lines wide, to a brown sharp point, semitorete, grooved above. Scape ("3 feet high") branches 1-3 inches apart, 1 inch long or less, petals erect, pale flowered

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8212

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Leitch & Curlis

DRUGGISTS

Southwest Fifth and Market Streets

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Herb Torrey 1871

Agave Newberryi

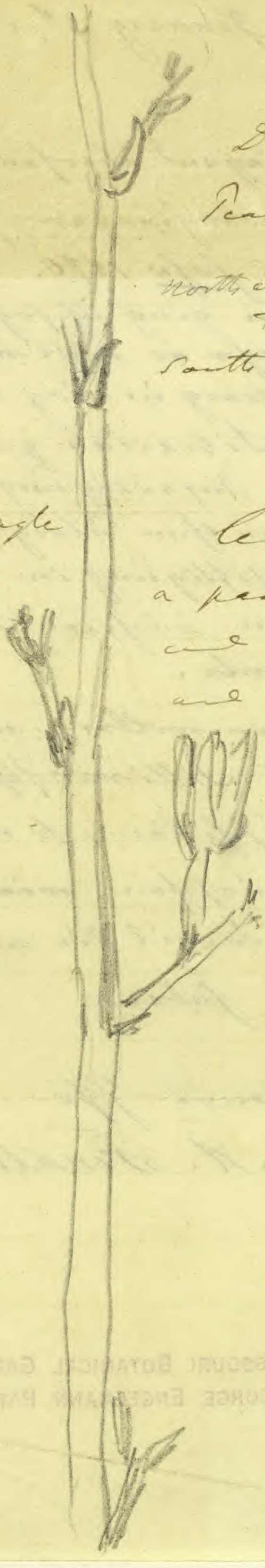
Dr Newberry in Ives Expedition

March 31 1858

Peacock spring Mohave Range on

North east of the Colorado,

South west of Mouth of Little Colorado



a single leaf

a panicle and rootstock and some

See figure of flower

Broken top of with short branches flowering and developed flowers

" leaves radical

" scape 8 feet high.

Leaf entire or margin, terminal spine triangular

See Bot. Ives Exped. p. 29.

Can it be A. Californica Hort Kew, ap. Jacobi Nachtrage p. 47 pl 17. a

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Am Jan 20

St Clenton, St. Louis Co. Mo.
January 3d, 1871

Lieber Hr Doctor

Beiliegend übersende ich Ihnen meine restaurirte Entdeckungen für Decbr: 1870., so wie für das Jahr 1870. Mit Ihrem Anschreiben gieng ich sogleich zu Hr. Slade, der mir, obschon er nicht mehr Director von der Mercantile Library ist, doch einen Anschreiben an den Librarian gab. Er sagte mir, dass bei der Anfertigung des catalogues nicht mehr viel zu thun übrig sei. Vielleicht könnte er mir Beschäftigung im Copiren geben, wovon er mir aber noch ein wünschen Exemplar zu Händen.

Wenn Sie so gut sein wollen, mir die November Nummer des Silliman'schen Journals per mail zuzuschicken, so will ich dieselbe, wenn Sie es wünschen, wieder per mail zurückschicken, damit Sie nicht so lange darauf zu warten haben.

Ergebenst Ihr
A. Fendler

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GEORGE ENGELMANN PAPERS
2128

George Engelmann M.D.
St Louis.
Mo

A Potatorum Hort Monac: tal: inferiorib
Cobij duplo brevior; f. lanceol. tubo 1/5
adnato parum exerto

einen

Beschwerden gegeben. Nie-
über angekündigten Fristen
s rechnen durfte, liess sich
npl., **also c^a. 25000 Karten**
der Kupferdruckpressen und
eht, neben meinen anderen
das Erscheinen der letzten
eil seit Anfang 1872 Papier,
zu können. Halte ich aber
übrig lassen, für die Sub-
n, in der Vorzüglichkeit und
twas langsamere Erscheinen
argelegten Verhältnisse um

Justus Perthes.

JRI BOTANICAL GARDEN
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4128

cm 0 1 2 3 4 5 6 7 8 9 10
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"Agave Potatorum Zuccari-" March 1871

" Hbm. 18. XII. 67 "

Herb. München Aug 1869

Flowered in Hb Munich Dec 18 1867

See Kunth En V. 824 et A. laxiflora 16. 825

anther 23 mm

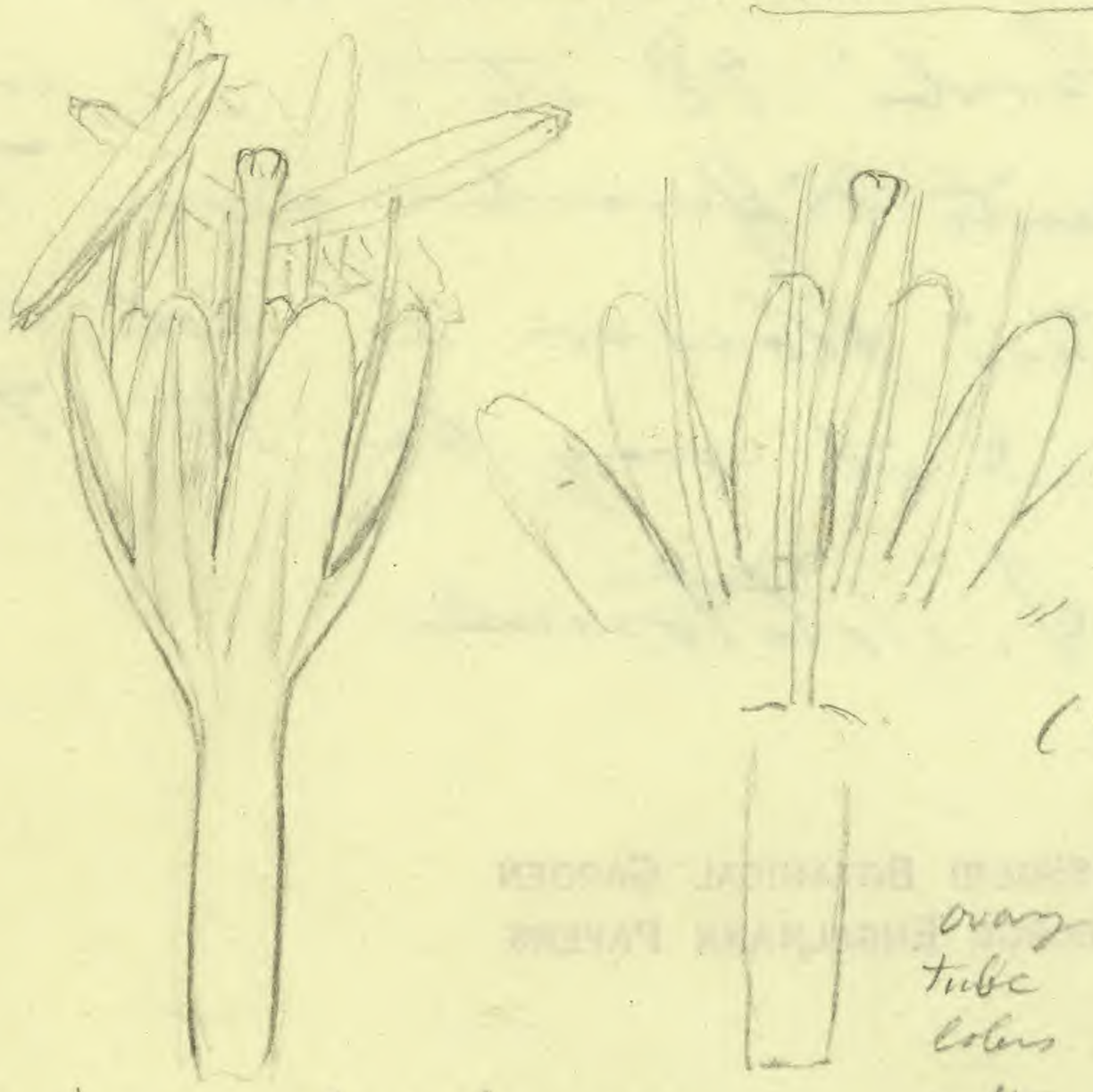
over

perigon longer than ovary

tubes nearly twice as long as infundibuliform tube

stamens inserted — upper part of tube (2 mm below fauces) with the style only slightly exserted.

(immature garden specimen ?)



5 mm

19

29

2

10 8

23

ovary 23 mm
tube 10
lobes 19 } 29
anthers 23
style & stam exsert 5 mm

This seems to be A. laxiflora Jacc. no! over

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APOTHECARIES' HALL
APOTHECARY AND CHEMIST.
Marble Building, cor. 4th and Olive Sts.,
ST. LOUIS, MO.

The description of the flowers of
Platanus? and Polygonum
Persicaria 78 etc? is somethings
quite different from this —
This flower is not described
and it may be the true

A. Potentilla

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SIC 8

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Ryan Mexiana 10 Dec 15

Jacobi Descr. et p. 306
Tube 8‴ lobes 10‴ Corg
stamens adnate to perigon to its "Knee"
Style Corg the stamens, 3½ ‴
made

Hunt Thwaites 1474

Style at Cent
9‴ Corg the stamens

another 13‴
12‴
13‴
(4‴)
8‴
16‴
4‴
3‴
4‴
Toller ×475
0.09 – 0.10 mm
36 – 43 ‴

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JONES & LEITCH,

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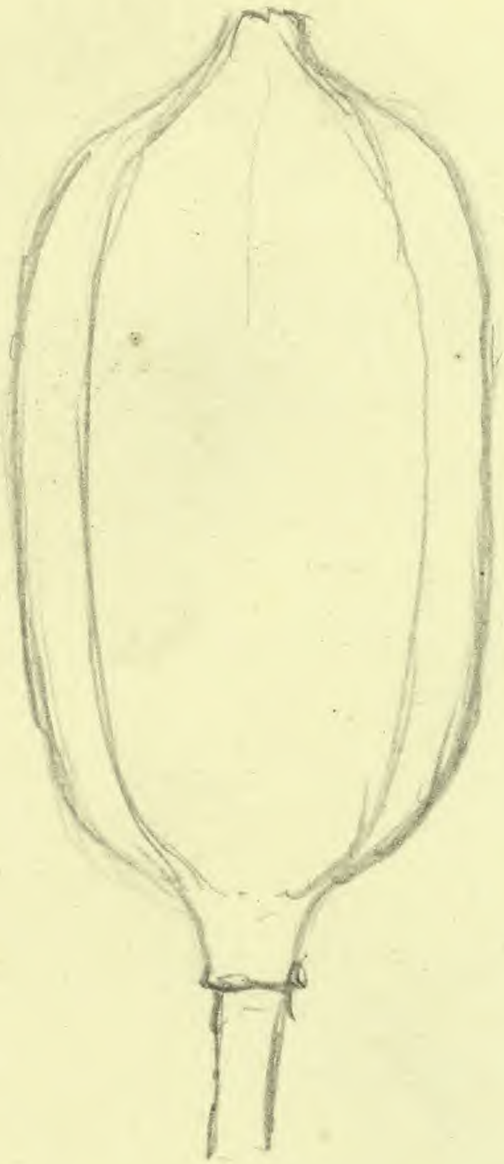
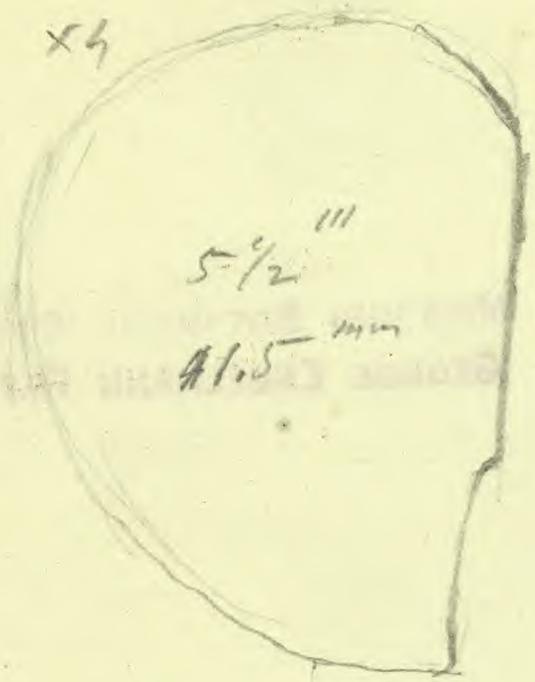
Agave Mexicana

Dec 12 1875

Antigua 1871



×4



5-½ ‴

41.5 mm

×150

HOTEL & TEITCH
PHOTOGRAPHING
TOWE

8217

JONES & LEITCH,

DRUGGISTS,

Corner Fifth and Market Streets, St. Louis, Mo.

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Agave Scolymus Karwinski ap. D. Salm. 1834. p. 307. Refug Bot V. pl. 72. t. 328

a cyanflora, Mexico.

8218

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anthers 8‴

3‴

6‴

16‴

5–6‴

16‴

"Agave Scolymus"

Oct 10 1875

Hab Thereck Antabes

Photographer and Artist!

Jacobi, Agave, p. 233 describes the flower perigon 1½" Color about as long as tube stamens 1¼" long, from the tube below throat anthers 8‴ long

37–44 / 415 mm

1 mm

Todaro × 415

= 0.09–0.11

4‴

4½‴

X1

× 150

0 1 2 3 4 5 6 7 8 9 10
cm
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8219

26 27 41 43 44
0.090 10 10 415
250

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JONES & LEITCH,
BOOKSELLERS,
Corner Fifth and Market Streets, St. Louis, Mo.

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Hort Col Monach. Aug 11. 1869

"Agave lurida" flowered here in 1867, & the
was about 16 feet high, flowers in a "dense
spike" (in pairs?) there is now a stout branch
from the axil of one of the upper leaves.
This is also an original plant of Karwinski's

All this about A lurida seems to be a mistake or must
be revised again. The plant described above was called lurida,
but was (perhaps erroneously) said to be the same as
our "Agave potatorum" with flowered 20 years or so
ago, which Carl to A. Americana. — To be reexamined

Kunth, en. V. 825. copies Jurasin and pretty accurately
describes our plant as A. lurida Jacq. (non Ait?) says that
the stamens are twice as long as the corolla

8221

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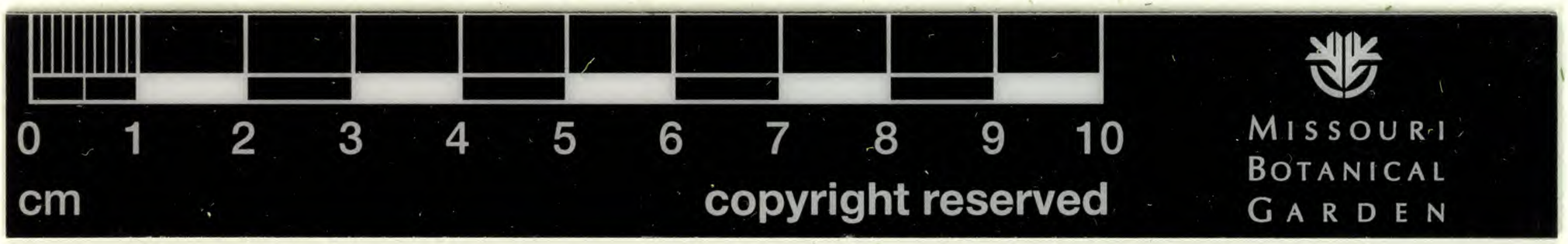
GEORGE ENGELMANN PAPERS



M. W. ALEXANDER,
South-east corner Fourth and Market Streets,
ST. LOUIS.

"Agave lurida Ait." (confirmed by Salm July 1871
Ic by Jacobi Ag. 109
Kunth En. V. 825
Ovens

Ichnoglein Iconogr. ex Jacquin Ast Nat Cur.
XVI pars 2, t. 49. 50

anthers 1 inch
25 mm

Seed 12 mm
5 lll

descripta
ap. Jacobi 103.

lll mm
18
24

lobes 11
Tube free 16 } 28 } 45
stamens 12

ovary 36

Masses parts from descript.
copied by Jacobi & lll parts
from figure

" Capsule 2 cells by "

8222

Details descriptions copied from Jurasaki C. C.
see Kunth V. 825. & Trabuti 109
Perigon 33–38 mm (= figure 42–45 mm)
Stamens twice as long as perigon i.e. exsert part
as long as perigon. " filaments 2 inches long "
anthers " about 1 inch long " (25 mm)

MISSOURI BOTANICAL GARDEN
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Agave flavo virens, Jacobi Agav. p. 258

folia e basi lata angustata (6-9 poll. longa 2") margine recto
cornea dentata ~~longe remote~~ - apiculo terminali longo
scapus 6½ ped altus, paniculo 2 ped longa 8 ped lata
umbellulae terminales 2-4 florae
ovarium pyriforme
perigonium campanulato - cylindricum, 5 lin long
lobi reflexi 7 lin longi
filamenta fauci inserta 18 lin longa

8223

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GEORGE ENGELMANN PAPERS

Articles.		March.	April.
SAN FRANCISCO.			
Flour, superfine	per barrel	$5 50 to $5 75	$5 75 to $7 25
extras	do	6 00 to 7 00	----------
Wheat, State	per cental	2 35 to 2 40	2 45 to 2 50
Oregon	do	2 35 to 2 40	2 45 to 2 50
Corn, white	do	1 50	1 65 to 1 70
yellow	do	1 50	1 65 to 1 70
Barley	do	1 25 to 1 40	1 35 to 1 60
Oats	do	1 50 to 1 70	1 60 to 1 75
Hay, State	per ton	13 00 to 15 50	12 00 to 14 50
Pork, mess	per barrel	----------	26 00
prime	do	----------	21 00 to 22 00
Beef, mess	do	----------	14 00 to 18 00
Lard, in barrels	per pound	13 to 15	14½ to 15½
domestic	do	14 to 14½	14 to 14½
Butter, State	do	27½ to 35	25 to 30
Oregon	do	----------	----------
overland	do	----------	----------
Cheese	do	10 to 14	10 to 14
Wool, native	do	20 to 23	18 to 27½
California	do	20 to 23	18 to 27½
Oregon	do	----------	----------

PRICES OF MIDDLING COTTON.

The following statement of the prices of middling cotton, at the first of each month of the past twenty years, prepared by the editor of the New York Shipping and Commercial List, will be found useful for reference:

YEARS.	QUOTATIONS.												Average of year.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
1871	15¼	15⅝	15¼	15⅓	-----	-----	-----	-----	-----	-----	-----	-----	-----
1870	25⅜	25½	23¼	22⅞	23⅓	22⅝	20¼	20	19¾	16⅜	17	16⅛	21. 02
1869	26½	29¼	29¼	28¾	28¾	29¾	34½	34½	35	27½	26¼	25¼	29. 60
1868	16½	19½	23	28	32½	31	32	30½	30½	26½	25¼	25¼	26. 79
1867	35	33	32	30½	27½	27¾	26½	28	26½	21½	19	16	26. 94
1866	51½	48	44	40	34	38½	36	36	33	42	39	34	39. 66
1865	120	83	83	45	45	46	44	48	43	44½	56	50	58. 96
1864	81½	84½	76	71	83½	107	155	164	185	125	128	128	115. 71
1863	68	88	89	77	66	52½	73	63½	66½	81	86½	80	74. 26
1862	37	31	23	28	26	31½	38½	47	48	56	60	67½	41. 13
1861	12¼	13	12¾	13½	14⅝	14½	15	16⅝	20½	22	22½	27½	17. 06
1860	11½	12	12	11⅞	12	12⅜	12⅛	12	12	11¾	12⅝	11½	11. 98
1859	12⅜	12⅝	12½	13	12⅝	11¾	12⅜	13	12⅜	12⅜	12¼	11¾	12. 42
1858	9¼	11¼	12⅝	12½	13⅛	12⅝	13	13⅛	13¼	13¾	12½	12¾	12. 48
1857	13¼	13½	14¼	14½	14¼	14	14½	15⅛	15¾	15¾	12½	11¾	14. 09
1856	9½	9½	10½	10⅝	11½	11	11½	12	11¾	12½	12⅝	12½	11. 29
1855	8⅝	9¼	9⅛	9⅝	10	11⅜	11⅝	11¼	11⅛	10¼	9½	10	10. 14
1854	10⅝	10⅜	10¼	10¼	9½	9½	9⅝	9⅞	9⅞	9⅝	9¾	9¼	9. 87
1853	9¾	10½	9⅞	10⅜	10¾	11	11	11	11	11	10¼	10⅜	10. 60
1852	8⅛	8¼	8⅛	8	8⅞	10	9¼	9¾	10⅛	10⅓	10	9¾	9. 20
1851	12¾	13⅛	10¾	11¼	11	9¼	9¼	7½	8⅞	9⅜	8⅛	8½	9. 98

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8224

ENGLISH SHORT-HORN CATTLE SALES.

Thornton's Circular for January, 1871, contains a record of sales of short-horns for the preceding quarter, and much other information of interest to American stockbreeders. From its pages we compile the following:

Short-horn sale of Messrs. Garne & Son, and Mr. George Garne, at Churchill Heath, October 4, 1870:

	£	s.	d.
54 cows and heifers, at an average of £36 2*s.* 11*d.*	1,951	19	0
3 bulls, at an average of £37 9*s*	112	7	0
57 averaged £36 4*s.* 3*d.* Total	2,064	6	0

Three cows brought respectively 77, 75, and 85 guineas; the best bull, 50 guineas. The lowest sale was that of a two-year old heifer, at 19 guineas.

Short-horn sale of the entire herd of William Butler, at Badminton, October 5, 1870:

	£	s.	d.
62 cows and heifers, at an average of £39 9*s.* 2*d*	2,446	10	0
12 bulls and calves, at an average of £32 2*s.* 3*d*	385	7	0
74 averaged £38 5*s.* 4*d.* Total	2,831	17	0

The tribe of Darlingtons, comprising 11 animals, averaged £85 3*s.*, the highest, a two-year old heifer, bringing 155 guineas.

Short-horn sale of selected stock from the herd of Lady Pigot, at Branche's Park, Newmarket, October 7, 1870:

	£	s.	d.
21 cows and heifers, at an average of £46 12*s*	978	12	0
9 bulls and calves, at an average of £21 14*s*	195	6	0
30 averaged £39 2*s.* 7*d.* Total	1,173	18	0

Short-horn sale of Sir George R. Philips, at Weston Park farm, Warwickshire, October 18, 1870, comprising several entire tribes:

	£	s.	d.
38 cows and heifers, at an average of £48	1,824	7	6
9 bulls, at an average of £28	252	0	0
47 averaged £44 3*s.* 7*d.* Total	2,076	7	6

Thirteen Sylphs and Knightleys averaged £83 16*s.* 9*d.*; 11 Welcomes averaged £33 4*s.* 4*d.*; 7 Gwyneths averaged £26 2*s.* The highest in the whole lot, a two-year old heifer, brought 205 guineas.

Six short-horn bulls from the Brailes herd, the property of H. J. Sheldon, esq., sold at the Weston Park farm sale for £264 12*s.*, averaging £44 2*s.*

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GEORGE ENGELMANN PAPERS

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Agave cyanifloræ

A. lucida ✕ Jacc. Tubus infundibuliformis lobis longior
filamenta infra medium tubum adnata
pars exserta inclusa fere duplo longior

A. Potatorum Hort Monac. Tub. infundib. lobis duplo brevior
filamenta tubo (4/5) longe ultra medium adnata
pars exserta inclusa quatuor brevior

A. Antillarum Tubus campanulatus, lobis ter.
quaterve brevior
filamenta tubo fere tubo adnata
pars exserta inclusa ~~tripo brevior~~ ~~ut~~ longior

A. rigida (Chalem) tubus infundib. lobis brevior
Sisaleta fere subæquales
filamenta medio tubo s. ultra medium adnata.
~~tubo~~
pars exserta inclusa fere æquans

Agave Newberryi tubus camp. lobis
multoties (5) brevior
filamenta basi tubi adnata

A. Consessii tubus campanulatus lobis
multoties (4-5) brevior
filamenta toto tubo adnata
pars exserta inclusa bis terve brevior

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South West Corner Fifth and Market Streets.
Leitch & Cortes
DRUGGISTS

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Agave cyanoflora (provisional)

lobi exteriores apice cucullato – calloso

A. Americana tubo infundibulif. lobis brevior
filamenta ultra medium tubo adnata
pars exserta inclusa (tenue) ~~brevior~~ longior

A. scabra tubo infundibulif. lobos aequans
filamenta ultra medium tubo adnata
pars exserta inclusam fere aequans

A. callifera tubo infundibulif. lobis paulo longior
filamenta ultra medium tubo inaequaliter adnata
pars exserta inclusam fere aequans

A. Palmeri? tubo campanulato lobos aequans
filamenta medio tubo inaequaliter adnata
pars exserta inclusa longior

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8226

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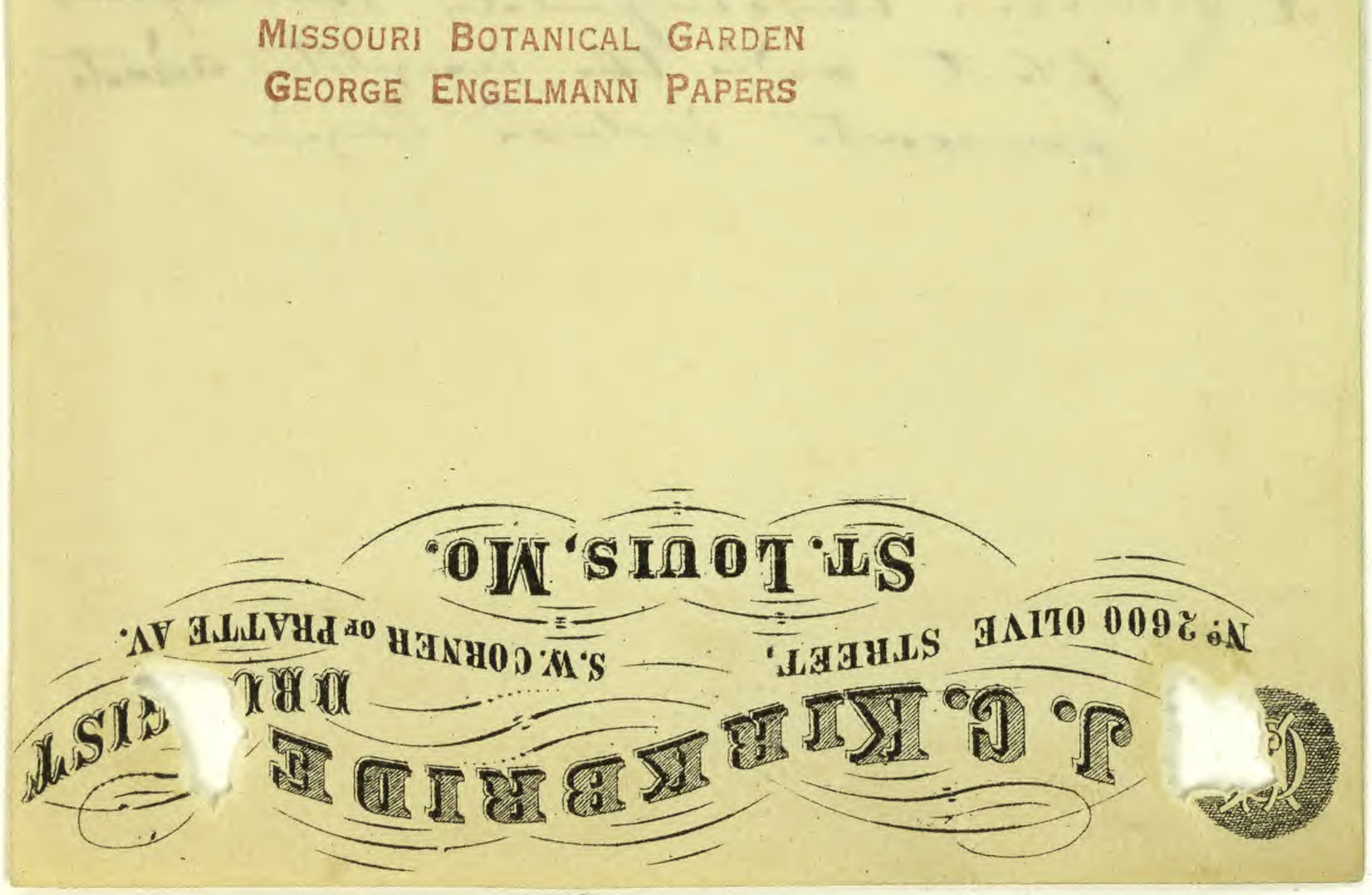

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Dobbs Ferry Sch. Book fo. 822
Ledger 122

Ledger system f. 8. 74 – 85

104 ?

105 – 111 – 113

~~120 ?~~

~~(126 – 129.)~~

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LEITCH & CORLIES,

DRUGGISTS,

South-West Corner of Fifth and Market Streets.

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8227-

Sept 7 1871

I find a slight callus at the exterior bases
in A. scabra (crispum) and A potatorum? Hort
In both the insertion of filaments in tube is Mus
equally high 3 ext. & 3 internal

A Americana insertion of filaments unequal

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MISSOURI BOTANICAL GARDEN
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Leitch & Corlies
DRUGGISTS
South West Corner Fifth and Market Streets.

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Agave gracilispina

flowers paniculate

perigon (dried specimen)

35 mm. long

Tube 15, lobes 20 mm long

flowers attached Four Thirds up the tube

20 mm above base, 5 mm below lobes

June 1880

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Custom House, Louisville, Ky.,

SURVEYOR'S OFFICE,

June 10, 1880.

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Dr Engelmann

Dear Sir

bees